

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 7,043,082 B2  
APPLICATION NO. : 09/754310  
DATED : May 9, 2006  
INVENTOR(S) : Kieran Gerard Larkin et al.

Page 1 of 4

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

COLUMN 1

Line 16, "x-ray" should read --x-ray.--.

COLUMN 3

Line 48, "comprises." should read --comprises:--.

COLUMN 5

Line 21, "an" should be deleted.

Line 54, " $f(x, y) = a(x, y) + b(x, y) \cdot \cos [2\pi (u_o \{x - x_o\} + v_o \{y - y_o\}) - \chi]$ " should read  
-- $f(x, y) = a(x, y) + b(x, y) \cdot \cos [2\pi (u_o \{x - x_o\} + v_o \{y - y_o\}) + \chi]$ --.

COLUMN 6

Line 20, "wherein  $i = \sqrt{b-1}$ " should read --wherein  $i = \sqrt{-1}$ --.

Line 34, "satisfies" should read --satisfy--.

COLUMN 7

Line 5, " $P(u, v) = \exp[iX(u, v)] = P(-u, -v) = -\exp[i(X(u, v) + \pi)]$ " should read  
-- $P(u, v) = \exp[i\chi(u, v)] = P(-u, -v) = -\exp[i(X(u, v) + \pi)]$ --.

Line 35, " $G_\Omega(u, v) = (B_\Omega(u - u_o, v - v_o) \exp[iX] + B_\Omega(u + u_o, v + v_o) \exp[-i\chi]) e^{-2\pi i(u x_0 + v y_0)}$ ,"  
should read  
-- $G_\Omega(u, v) = (B_\Omega(u - u_o, v - v_o) \exp[i\chi] + B_\Omega(u + u_o, v + v_o) \exp[-i\chi]) e^{-2\pi i(u x_0 + v y_0)}$ --.

COLUMN 9

Line 19, "an" should read --a--.

COLUMN 10

Line 29, "2-dimensions,)" should read --2-dimensions)--.

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 7,043,082 B2  
APPLICATION NO. : 09/754310  
DATED : May 9, 2006  
INVENTOR(S) : Kieran Gerard Larkin et al.

Page 2 of 4

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

COLUMN 11

Line 56, " $2\pi(u+iv) \equiv 2\pi q \cdot \exp(i\phi)$ " should read  $-2\pi(u+iv) \equiv 2\pi q \cdot \exp(i\phi)$ --.

COLUMN 12

Lines 6-9, " $2\pi i q \exp(i\phi) G(u, v) \longleftrightarrow D\{g(x, y)\}$ " (31)

$(2\pi i)^2 q^2 \exp(2i\phi) G(u, v) \longleftrightarrow D^2\{g(x, y)\}$ " (32)

should read

$-2\pi i q \exp(i\phi) G(u, v) \longleftrightarrow D\{g(x, y)\}$  (31)

$(2\pi i)^2 q^2 \exp(2i\phi) G(u, v) \longleftrightarrow D^2\{g(x, y)\}$  (32)--.

Line 16, "is" should read --are--.

Line 23, "is" should read --are--.

Line 49, "operator" should read --operator.--.

Line 61, " $\exp(i\phi) G \longleftrightarrow D_M\{g(x, y)\}$ " (33) should read

--  $\exp(i\phi) G \longleftrightarrow D_M\{g(x, y)\}$  (33)--.

COLUMN 13

Line 24, "greylevels" should read --grey levels--.

Line 44, "and 14E," should read --and 14E.--.

COLUMN 15

Line 34, "is" should be deleted.

Line 67, "patterns ie." should read --patterns, i.e.,--.

COLUMN 16

$V\{f(x, y)\} = F^{-1}\{\exp[i\phi]F\{f(x, y)\}\}$  (41)

$F\{f(x, y)\} = F(u, v) =$

$\int_{-\infty}^{+\infty} \int_{-\infty}^{+\infty} f(x, y) \exp[-2\pi i(ux+vy)] dx dy$

$F^{-1}\{F(x, y)\} = f(x, y) =$

$\int_{-\infty}^{+\infty} \int_{-\infty}^{+\infty} f(u, v) \exp[+2\pi i(ux+vy)] du dv$

$u = q \cos \phi$   
 $v = q \sin \phi$

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 7,043,082 B2  
 APPLICATION NO. : 09/754310  
 DATED : May 9, 2006  
 INVENTOR(S) : Kieran Gerard Larkin et al.

Page 3 of 4

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

should read  

$$-- V\{f(x, y)\} = F^{-1}\{\exp[i\phi]F\{f(x, y)\}\}$$

$$F\{f(x, y)\} = F(u, v) =$$

$$\int_{-\infty}^{+\infty} \int_{-\infty}^{+\infty} f(x, y) \exp[-2\pi i(ux + vy)] dx dy$$

$$F^{-1}\{F(x, y)\} = f(x, y) =$$

$$\int_{-\infty}^{+\infty} \int_{-\infty}^{+\infty} f(u, v) \exp[+2\pi i(ux + vy)] du dv$$

$$u = \rho \cos \phi$$

$$v = \rho \sin \phi \} --.$$

COLUMN 17

Line 27, "compensating" should read --compensated--.

COLUMN 18

Line 4, "advantage" should read --advantageous--.

Line 47, " $\alpha_{nm} = \text{Arg}\{ig_{nm} - i \exp[-i\beta_c]V\{g_{nm}\}\} \cong h[\chi + (\delta m + \delta n)/2]$ " should read  

$$--\alpha_{nm} = \text{Arg}\{ig_{nm} - i \exp[-i\beta_c]V\{g_{nm}\}\} \cong h[\chi + (\delta m + \delta n)/2]--$$

COLUMN 19

Line 42, " $h_c(x, y) = \frac{\alpha_{nm} - \alpha_{mk}}{|\alpha_{nm} - \alpha_{mk}|}$ " should read  

$$--h_c(x, y) = \frac{\alpha_{nm} - \alpha_{mk}}{|\alpha_{nm} - \alpha_{mk}|}$$

Line 53, "an" should be deleted.

COLUMN 21

Line 30, "a" (second occurrence) should read --an--.

COLUMN 22

Line 11, "sponds" should read --spond--.

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 7,043,082 B2  
APPLICATION NO. : 09/754310  
DATED : May 9, 2006  
INVENTOR(S) : Kieran Gerard Larkin et al.

Page 4 of 4

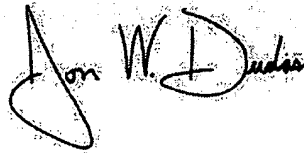
It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

COLUMN 25

Line 14, "value" should read --values--.

Signed and Sealed this

Twentieth Day of February, 2007

A handwritten signature in black ink, appearing to read "Jon W. Dudas". The signature is stylized with a large, looped initial "J" and a cursive "Dudas".

JON W. DUDAS  
*Director of the United States Patent and Trademark Office*